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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,306	08/25/2000	Christoph Glingener	449122000500	3267

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EXAMINER	
HAN, CLEMENCE S	

ART UNIT	PAPER NUMBER
2665	9

DATE MAILED: 05/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/645,306	Applicant(s) GLINGENER ET AL.	
	Examiner Clemence Han	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Responsive to amendment received on February 24, 2004, amended claims 1, 2, 6–9 and 12 are entered as requested.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 1, 6, 7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent 6,111,673) in view of Chang-Hasnain et al. (US Patent 5,541,756) and further in view of Gitlin et al. (US Patent 5,278,689) and Yao (US Patent 5,917,179).

In regarding to claim 1, Chang teaches the method of converting route information to allocated frequency mixes at the transmitter end (Column 17 Line 31-32), the method of producing route signals by modulating a carrier signal with the frequency mixes (Column 17 Line 35-37), the method of placing the route signal 210 in front of the data packet 211, the method of transmitting the data packet including the route signal (Figure 2), the method of evaluating at the receiver end, the route signals in terms of the frequency mixes used for the modulation (Column 9 Line 35-36) and the method of switching the data packet

using the route information obtained from the frequency mixes (Column 9 Line 38-39). Chang, however, does not teach the method of placing the route signal both in front of and after the data packet. Chang-Hasnain discloses the method of placing the route signal both in front of and after the data packet (Figure 1). Chang-Hasnain uses the route signal 14 in front of the data packet for the routing (Column 4 Line 3) and uses the route signal 16 after the data packet for the termination (Column 4 Line 22). It would have been obvious to one skilled in the art to modify Chang to have the route signal also after the data packet as taught by Chang-Hasnain in order to easily signal the termination. Chang in view of Chang–Hasnain, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang in view of Chang–Hasnain to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Chang–Hasnain and Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of

Chang–Hasnain and Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

In regarding to claim 6, Chang teaches the method of converting route information to allocated frequency mixes at the transmitter end (Column 17 Line 31-32), the method of producing route signals by modulating a carrier signal with the frequency mixes (Column 17 Line 35-37), the method of placing the route signal 210 in front of the data packet 211, the method of transmitting the data packet including the route signal (Figure 2), the method of evaluating at the receiver end, the route signals in terms of the frequency mixes used for the modulation (Column 9 Line 35-36) and the method of switching the data packet using the route information obtained from the frequency mixes (Column 9 Line 38-39). Chang, however, does not teach the use of the route signal for the termination. Chang-Hasnain discloses the method of placing the route signal after the data packet (Figure 1). Chang-Hasnain also teaches the use of the route signal 16 after the data packet for the termination (Column 4 Line 22). It would have been obvious to one skilled in the art to modify Chang to have the route signal also after the data packet as taught by Chang-Hasnain in order to easily signal the termination. Chang in view of Chang–Hasnain, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin

teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang in view of Chang–Hasnain to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Chang–Hasnain and Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Chang–Hasnain and Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

In regarding to claim 7, Chang teaches the transmission unit (Figure 7) and the reception unit (Figure 4), the conversion unit at the transmitter end for converting route information for the data packet to route signals produced by modulating a carrier signal with a frequency mix and for adding the route signals 210 in front of the data packet 211 (Column 17 Line 31-32, 35-36), transmission device for transmitting the data packet including the route signal (Figure 2), the evaluation unit at the receiver end for detecting and evaluating the route signals (Column 9 Line 35-36) and the switching unit for switching through the data packet using the route information ascertained by evaluating the route signals

(Column 9 Line 38-39). Chang, however, does not teach the method of placing the route signal both in front of and after the data packet. Chang-Hasnain discloses the method of placing the route signal both in front of and after the data packet (Figure 1). Chang-Hasnain uses the route signal 14 in front of the data packet for the routing (Column 4 Line 3) and uses the route signal 16 after the data packet for the termination (Column 4 Line 22). It would have been obvious to one skilled in the art to modify Chang to have the route signal also after the data packet as taught by Chang-Hasnain in order to easily signal the termination. Chang in view of Chang–Hasnain, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang in view of Chang–Hasnain to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Chang–Hasnain and Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Chang–Hasnain and Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

In regarding to claim 10, Chang-Hasnain discloses the optical splitter 20 at the receiver end for isolating part of a data packet stream 10, said part 22 being forwarded to the evaluation unit.

In regarding to claim 11, Chang-Hasnain discloses the optical delay element 38, at the receiver end, for delaying the data packet stream by a minimum length, said minimum length comprising a switching time required for evaluating a preceding one of the route signals and a switch time required for switching through a route (Column 6 Line 23-35).

4. Claim 2–5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. in view of Gitlin et al. and further in view of Yao.

In regarding to claim 2, Chang teaches the method of converting route information to allocated frequency mixes at the transmitter end (Column 17 Line 31-32), the method of producing route signals by modulating a carrier signal with the frequency mixes (Column 17 Line 35-37), the method of placing the route signal 210 in front of the data packet 211, the method of transmitting the data packet including the route signal (Figure 2), the method of evaluating at the receiver end, the route signals in terms of the frequency mixes used for the modulation (Column 9 Line 35-36) and the method of switching the data packet using the route information obtained from the frequency mixes (Column 9 Line 38-

39). Chang, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

In regarding to claim 3 and 4, Chang teach the use of optical modulator 760. Chang, however, does not specify whether amplitude modulation or phase modulation are used. Yao teaches both the amplitude modulation and the phase modulation of the carrier signal (Column 7 Line 47). It would have been obvious to one skilled in the art to use in Chang's method either the amplitude modulation or the phase modulation as taught by Yao in order to convert the route signal to the optical bandwidth.

In regarding to claim 5, Chang teaches a carrier frequency selected as a data transmission rate (Column 1 Line 66 – Column 2 Line 1). Chang, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

In regarding to claim 8, Chang teaches the transmission unit (Figure 7) and the reception unit (Figure 4), the conversion unit at the transmitter end for converting route information for the data packet to route signals produced by modulating a carrier signal with a frequency mix and for adding the route signals 210 in front of the data packet 211 (Column 17 Line 31-32, 35-36), transmission device for transmitting the data packet including the route signal (Figure 2), the evaluation unit at the receiver end for detecting and evaluating the route signals

(Column 9 Line 35-36) and the switching unit for switching through the data packet using the route information ascertained by evaluating the route signals (Column 9 Line 38-39). Chang, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. in view of Cotter et al. (US Patent 5,912,753) and further in view of Gitlin et al. and Yao.

In regarding to claim 9, Chang teaches the transmission unit (Figure 7) and the reception unit (Figure 4), the conversion unit at the transmitter end for converting route information for the data packet to route signals produced by

modulating a carrier signal with a frequency mix and for adding the route signals 210 in front of the data packet 211 (Column 17 Line 31-32, 35-36), transmission device for transmitting the data packet including the route signal (Figure 2), the evaluation unit at the receiver end for detecting and evaluating the route signals (Column 9 Line 35-36) and the switching unit for switching through the data packet using the route information ascertained by evaluating the route signals (Column 9 Line 38-39). Chang, however, does not teach the synchronization unit or the use of the route signal for the purpose of clock synchronization. Cotter teaches the synchronization unit (Figure 18) or the use of the route signal for the purpose of clock synchronization (Column 17 Line 33-38). It would have been obvious to one skilled in the art to modify Chang to use route signal for the purpose of clock synchronization as taught by Cotter in order to ensure that the signal from the evaluation unit will take effect only at the correct time. Chang in view of Cotter, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang in view of Cotter to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Cotter and Gitlin,

however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Cotter and Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. in view of Cotter et al., Gitlin et al. and Yao and further in view of Chang-Hasnain et al..

In regarding to claim 12, Chang teaches the transmission unit (Figure 7) and the reception unit (Figure 4), the conversion unit at the transmitter end for converting route information for the data packet to route signals produced by modulating a carrier signal with a frequency mix and for adding the route signals 210 in front of the data packet 211 (Column 17 Line 31-32, 35-36), transmission device for transmitting the data packet including the route signal (Figure 2), the evaluation unit at the receiver end for detecting and evaluating the route signals (Column 9 Line 35-36) and the switching unit for switching through the data packet using the route information ascertained by evaluating the route signals (Column 9 Line 38-39). Chang, however, does not teach the synchronization unit or the use of the route signal for the purpose of clock synchronization. Cotter

teaches the synchronization unit (Figure 18) or the use of the route signal for the purpose of clock synchronization (Column 17 Line 33-38). It would have been obvious to one skilled in the art to modify Chang to use route signal for the purpose of clock synchronization as taught by Cotter in order to ensure that the signal from the evaluation unit will take effect only at the correct time. Chang in view of Cotter, however, does not teach the carrier frequency selected for the route signal as half a data transmission rate. Gitlin teaches the carrier frequency selected for the route signal as lower rate than the data transmission rate (Figure 1). It would have been obvious to one skilled in the art to modify Chang in view of Cotter to use lower rate for the routing signal as taught by Gitlin in order to use cheaper equipment to process header. Chang in view of Cotter and Gitlin, however, does not teach the frequency mixes including audio frequencies. Yao teaches the frequency mixes including audio frequencies (Column 7 Line 46). It would have been obvious to one skilled in the art to modify Chang in view of Cotter and Gitlin to use the frequency mixes including audio frequencies as taught by Yao in order to use cheaper equipment at the receiving end. Chang in view of Cotter, Gitlin and Yao, however does not teach the optical delay element arranged between the optical splitter and the switching unit. Chang-Hasnain teaches the optical delay element 38 arranged between the optical splitter 20 and the switching

unit 34. It would have been obvious to one skilled in the art to modify Chang in view of Cotter, Gitlin and Yao to have the optical delay element between the optical splitter and the switching unit as taught by Chang–Hasnain in order to synchronize the timing for between the data and the header.

Response to Arguments

7. Applicant's arguments filed on February 24, 2004 have been fully considered but they are not persuasive.

8. In regarding to claim 2 and 8, the applicants argue that Chang neither teaches nor suggests placing a route signal both in front of and after the data packet. This limitation is not found in the claims. The applicants has added two new limitations in claims and further argue that Chang does not teach these limitations. The new added limitations are using carrier signals having a carrier frequency of half the data transmission rate to produce the route signals and using frequency mixes having frequencies including audio frequencies. However, the method of using lower rate for the header, which contains the routing signals, is well known in the art (Gitlin et al. Figure 1). The method of using low frequency range for the frequency mixes is also well known (Yao Column 7 Line 46).

9. In regarding to claim 1, 3–7 and 10–12, the applicants has added two new limitations in claims and argue that references do not teach these limitations. The

new added limitations are using carrier signals having a carrier frequency of half the data transmission rate to produce the route signals and using frequency mixes having frequencies including audio frequencies. However, the method of using lower rate for the header, which contains the routing signals, is well known in the art (Gitlin et al. Figure 1). The method of using low frequency range for the frequency mixes is also well known (Yao Column 7 Line 46).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to the optical data routing.

U.S. Patent 4,894,818 to Fujioka et al.

U.S. Patent 5,982,516 to Murphy et al.

U.S. Patent 6,559,991 to Farley et al.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (703) 305-0372. The examiner can normally be reached on Monday-Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. H.

Clemence Han
Examiner
Art Unit 2665

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